Spring 2004 Commercial Vegetable Variety Trials

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Contents

Names of chemicals are mentioned only for describing the production practices used. This represents neither a recommendation nor an endorsement of these products.

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Introduction: Tips for Interpreting Vegetable Variety Performance

Edgar Vinson and Joe Kemble

The spring 2004 variety trials regional bulletin includes vegetable variety information from Auburn University, Mississippi State University, and the University of Georgia. By studying information in this report, growers, extension specialists, and seed companies will be able to select the best possible vegetable varieties.

Although yield is a good indicator of varietal performance, other information must also be considered. The following information provides a few tips for interpreting the results in this report.

Open pollinated or hybrid varieties

In general, hybrids (also referred to as F_1) are earlier and produce a more uniform crop. Often they have improved disease, pest, or virus tolerance/resistance. Hybrid varieties are often more expensive than open pollinated varieties (OP), and seeds cannot be collected from one crop to plant the next. Despite the advantages hybrids offer, OP are still often planted in Alabama. Selecting a hybrid variety is the first step toward earliness and quality.

Yield potential

Yields reported in variety trial results are extrapolated from small plots. Depending on the vegetable crop, plot sizes range between 100 to 500 square feet. Yields per acre are estimated by multiplying plot yields by corrective factors ranging from 100 to 1,000. Small errors are thus amplified, and estimated yields per acre may not be realistic. Therefore, locations cannot be compared by just looking at the range of yields actually reported. However, the relative differences in performance among varieties are realistic, and can be used to identify best-performing varieties.

Statistical interpretation

The coefficient of determination (R^2), coefficient of variation (CV), and least significant difference (LSD, 5%) are reported for each test. These numbers are helpful in separating the differences due to small plots (sampling error) and true (but unknown) differences among entries.

R^2 ranges between 0 and 1. Values close to 1 suggest that the test was conducted under good conditions and most of the variability observed was mainly due to the effect of variety and replication. Random, uncontrolled errors were of lesser importance.

CV is an expression of yield variability relative to yield mean. Low CVs are desirable (under 20%), but are not always achieved.

There must be a minimum yield difference between two varieties before one can statistically conclude that one variety actually performs better than another. This is known as the least significant difference (LSD). When the difference in yield is less than the LSD value, one cannot conclude that there is any real difference between two varieties.

For example, in the seedless watermelon trial presented in this issue conducted at the North Alabama Horticulture Research Center, 'Millennium' yielded 32,138 pounds per acre, while 'Sun Ray' and 'Revolution' yielded 26,474 and 21,109 pounds per acre, respectively. Since there was less than a 7,309 difference between 'Millennium' and 'Sun Ray', there is no statistical difference between these two varieties. However, the yield difference between 'Millennium' and 'Revolution' was 11,029, indicating that there is a real difference between these two varieties. From a practical point of view, producers should place the most importance on LSD values when interpreting results.

Testing conditions

AU vegetable variety trials are conducted under standard, recommended commercial production practices. If the cropping system to be used is different from that used in the trials, the results of the trials may not apply. Information on soil type (Table 1), planting dates, fertilizer rates, and spray schedules is provided to help producers compare their own practices to the standard one used in the trials, and make relevant adjustments.

Ratings of trials

At each location, variety trials were rated on a 1 to 5 scale, based on weather conditions, fertilization, irrigation, pest pressure, and overall performance (Table 2). Results from trials with ratings of 2 and under are not reported. These numbers may be used to interpret differences in performance from location to location. The overall rating may be used to give more importance to the results of variety performance under good growing conditions.

Where to get seeds

Because seeds are alive, their performance and germination rate depends on how old they are, where and how they were collected, and how they have been handled and stored. It is always preferable to get certified seeds from a reputable source, such as the ones listed in Seed Sources for Alabama Trials (p. 32).

Several factors other than yield have to be considered when choosing a vegetable variety from a variety trial report. The main factors are type, resistance and tolerance to diseases, earliness, and, of course, availability and cost of seeds. It is always better to try two to three varieties on a small scale before making a large planting of a single variety.

Vegetable trials on the Web

For more vegetable variety information be sure to visit the vegetable varieties Web page at www.aces.edu/department/com_veg/veg_trial/vegetabl.htm. This Web site describes variety types, explains the ratings system, and presents information about participating seed companies.

Table 1. Soil Types at the Locations of the Alabama Trials

Location	Water-holding capacity *(in/in)*	Soil type
Gulf Coast Research and Extension Center (Fairhope)	0.09 - 0.19	Malbis fine sandy loam
Brewton Agricultural Research Unit (Brewton)	0.12 - 0.14	Benndale fine sandy loam
Wiregrass Research and Extension Center (Headland)	0.14 - 0.15	Dothan sandy loam
Lower Coastal Plain Substation (Camden)	0.13 - 0.15	Forkland fine sandy loam
E.V. Smith Research Center, Horticultural Unit (Shorter)	0.15 - 0.17	Norfolk-orangeburg loamy sand
Chilton Research and Extension Center (Clanton)	0.13 - 0.15	Luvernue sandy loam
Upper Coastal Plain Agricultural Research Center (Winfield)	0.13 - 0.20	Savannah loam
North Alabama Horticulture Research Center (Cullman)	0.16 - 0.20	Hartsells-Albertville fine sandy loam
Sand Mountain Research and Extension Center (Crossville)	0.16 - 0.18	Wynnville fine sandy loam

Table 2. Description of Ratings

Rating	Weather	Fertilizer	Irrigation	Pests	Overall
5	Very Good	Very Good	Very Good	None	Excellent
4	Favorable	Good	Good	Light	Good
3	Acceptable	Acceptable	Acceptable	Tolerable	Acceptable
2	Adverse	Low	Low	Adverse	Questionable
1	Destructive	Very Low	Insufficient	Destructive	Useless

Yellow and White Supersweet Corn Trial Continues in Central Alabama

Joe Kemble, Edgar Vinson, and Jason Burkett

Yellow and white supersweet (sh_2) sweet corn varieties were evaluated at E.V. Smith Research Center (EVSRC) in Shorter, Alabama (Tables 1 and 2).

Single row plots 20 feet by 6 feet were established with a within row spacing of eight to ten inches creating a stand of approximately 26,000 plants per acre. To prevent cross pollenation, yellow and white sh_2 corn types were separated by 300 feet. Corn varieties were planted on May 12.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. For current recommendations for pest and weed control in vegetable production in Alabama, consult your county extension agent online at http://www.aces.edu/counties/.

Sweet corn varieties were harvested on July 16 and 19. Yield (Tables 3 and 4) and ear quality characteristics (Table 4) were determined. In the yellow supersweet corn category, 'Envy' and 'Saturn' produced significantly higher yields than all other varieties including the older more established variety 'Primetime'. In the white supersweet category, 'Extra Tender' and the standard 'Variety 8101' produced yields that were significantly higher than the others. 'Windham' and 'Millennium' produced the lowest yields.

Table 1. Ratings of 2004 Sweet Corn Variety Trial[1]

Location	EVSRC
Weather	5
Fertility	5
Irrigation	5
Pests	3
Overall	4

[1]See introduction for a description of rating scales.

Table 2. Seed Source, Type, Color, and Earliness of Selected Sweet Corn Varieties

Variety	Seed source	Color	Type	Days to harvest	Disease resistance tolerance[1]	Years evaluated
Boreal	Novartis	W	sh_2	78	CR, NCLB, SBW	02-04
Envy	Seedway	Y	sh_2	81	CR, NCLB, SBW,SCLB	02-04
Flagship	Seedway	W	sh_2	84	NCLB, SBW	02-04
Millennium	Seedway	W	sh_2	82	CR, NCLB, SBW	02-04
Prime Time	Novartis	Y	sh_2	79	NCLB, SBW	97-99,02-04
Saturn	Seedway	Y	sh_2	75	CR, NCLB, SBW, SCLB	04
Variety 6800	Abbott&Cobb	Y	sh_2	72	NCLB, SBW	02-04
Variety 8101	Abbott & Cobb	W	sh_2	81	NCLB, SBW	96,97,99,02-04
Vision	Seiger	Y	*sh_2	73	CR, SBW	04
White Saturn	Seedway	W	sh_2	75	NCLB, SBW, CR	04
Windham	Novartis	W	sh_2	79	CR, NCLB, SBW	02-04
Xtra Tender 173A	Sieger	Y	*sh_2	73	—	04

[1] Disease resistance/tolerance: CR = Corn Rust; NCLB = Northern Corn Leaf Blight; SBW = Stewart's Bacterial Wilt; SCLB = Southern Corn Leaf Blight.

* = improved supersweet for better eating quality.

— = no information available.

Table 3. Performance of Selected White and Yellow Supersweet Corn Varieties

Variety	Type[1]	Yield *lbs/ac*	Ear number *no/ac*
Extra Tender	W	10,144	17,243
Variety 8101	W	9,491	16,063
White Saturn	W	7,104	13,068
Boreal	W	6,974	14,066
Windham	W	4,748	8,258
Millennium	W	4,716	8,531
r^2		***0.41***	***0.42***
CV		***40***	***36***
lsd		***1,938***	***6,958***
Envy	Y	8,300	14,641
Saturn	Y	6,391	11,616
Flagship	Y	5,276	9,166
Prime Time	Y	4,863	9,257
Variety 6800	Y	4,424	8,349
Vision	Y	2,470	5,203
r^2		***0.50***	***0.44***
CV		***41***	***40***
LSD		***1,502***	***5,894***

[1]Type: W = White, Y = Yellow.

Table 4. Quality Ratings of Selected White and Yellow Supersweet Corn Varieties

Variety	Type[1]	Quality rating[2]	Tip cover[3]	Ear tip fill[3]	Eye appeal[3]	Ear length *in*	Ear diameter *in*
Variety 8101	W	12.50	4.13	4.25	4.13	8.3	1.5
Millennium	W	11.88	4.25	3.75	3.88	8.7	1.4
Windham	W	11.63	4.50	3.88	4.33	8.3	1.4
Extra Tender	W	10.88	3.63	3.63	3.63	9.1	1.7
White Saturn	W	10.88	3.63	3.50	3.75	7.8	1.5
Boreal	W	10.13	3.75	3.50	3.75	7.6	1.4
r^2		***0.40***	***0.32***	***0.40***	***0.30***	***0.40***	***0.70***
CV		***11***	***14***	***11***	***9***	***12***	***5***
lsd		***1.8***	***0.82***	***0.63***	***0.71***	***1.10***	***0.11***
Saturn	Y	12.83	4.17	4.17	4.50	6.8	1.2
SS 6800	Y	12.75	4.25	4.25	4.25	14.5	1.7
Prime Time	Y	12.38	3.88	4.00	4.50	8.0	1.2
Flagship	Y	12.25	4.63	3.88	3.75	8.4	1.2
Vision	Y	12.25	4.25	4.00	4.00	3.6	0.7
Envy	Y	10.83	4.50	3.67	4.00	8.8	1.6
r^2		***0.30***	***0.30***	***0.11***	***0.53***	***0.40***	***0.30***
CV		***10***	***13***	***16***	***8***	***53***	***16***
LSD		***2.33***	***1.04***	***1.15***	***0.68***	***8.18***	***1.0***

[1]Type: W = White, Y = Yellow.
[2]Quality rating is the sum of tip cover, ear fill, and eye appeal ratings.
[3]Tip cover, ear fill, and eye appeal ratings: 5=excellent; 4=good; 3=fair; 2=poor; 1=very poor.

Cantaloupe Varieties Produce Larger Fruit This Year in Alabama

Joe Kemble, Edgar Vinson, and Jason Burkett

A small melon trial was conducted at the E.V. Smith Research Center (EVSRC) in Shorter, Alabama (Tables 1 and 2).

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. For current recommendations for pest and weed control in vegetable production in Alabama, consult your county extension agent online at http://www.aces.edu/counties/.

Cantaloupe varieties were direct-seeded on May 13 into 30 foot rows with six feet between rows and a within row spacing of 1.5 feet. Drip irrigation and black plastic mulch were used.

Melons were harvested at the half slip stage of maturity (Table 3). Melons were harvested four times from July 15 through July 27 .

Yields were high overall this year as compared to 2003. 'Minerva' produced the highest marketable yield but these yields were not significantly higher than the yield of 'ACX 4757', 'Moneyloupe' or 'Odyssey'. Yield of the market standard 'Athena' was significantly lower than this group of varieties. However, 'Athena' produced a higher total number of marketable fruit than all other varieties. This is attributed to its significantly lower individual fruit weight.

For commercial cantaloupe production, individual fruit weight should be 4 to 6 pounds. Larger fruit are generally sold at road side markets. 'Athena' melons were slightly above the recommended commercial weight at 7.4 pounds. 'Minerva', which has a size range of 7 to 8 pounds, produced fruit with individual weights of 10.6 pounds.

Table 1. Ratings of 2004 Cantaloupe Variety Trial[1]

Location	EVSRC
Weather	5
Fertility	5
Irrigation	5
Pests	4
Overall	5

[1]See introduction for a description of rating scales.

Table 2. Seed Source, Fruit Characteristics, and Relative Earliness of Selected Cantaloupe Varieties

Variety	Type	Seed source	Rind aspect[1]	Flesh color[2]	Days to harvest	Disease claims[3]	Years evaluated
ACX 4757	F1	Abbott & Cobb	E	O	—[4]	—	03,04
Aphrodite (RML 8793)	F1	Seedway/Novartis	E	O	—	—	02-04
Athena*	F1	Seedway/Novartis	E	O	80	FW,PM,	94-04
Eclipse	F1	Seminis	E	O	85	FW,PM	96-01,03,04
Minerva (RML 6969)	F1	Seedway/Novartis	E	O	77	FWPM	01-04
Moneyloupe (ACX 3908)	F1	Abbott & Cobb	E	O	—	—	02-04
Odyssey	F1	Sunseeds	E	O	—	—	02-04
**PCX 221*	F1	Willhite	E	O	77	FW,PM,	03,04
Vienna	F1	Seminis	E	O	80	—	98,99,03,04

[1] Rind aspect: E= Eastern.
[2] Flesh Color: O = Orange.
[3] Disease claims: FW = Fusarium Wilt; PM = Powdery Mildew.
[4] — = not found; from seed catalogues.
* = not sensitive to sulfur; ** = not commercially available.

Sweetness was measured at harvest using a hand-held refractometer. Cantaloupes with soluble solids reading below 10^0 Brix do not taste sweet. 'Athena' and 'Aphrodite' (a larger version of 'Athena') had the highest brix reading at 10.4 and 10.9, respectively. These two varieties also had a small internal cavity. Fruit with smaller cavities have fewer seeds and a larger area of edible flesh. Others varieties with small internal cavities were 'Moneyloupe' and 'ACX 4757'.

Table 3. Yield of Selected Eastern Cantaloupe Varieties

Variety	Marketable yield *lbs/ac*	Marketable fruits *no/ac*	Cull weight *lbs*	Individual fruit wt. *lbs*	Soluble solids *brix*
Minerva	58,788	5,627	2,468	10.6	•
ACX 4757	52,643	5,445	2,056	9.7	9.9
Odyssey	49,287	6,050	5,094	8.1	9.9
Moneyloupe	45,569	4,780	•	9.9	9.3
Athena	45,218	6,111	1,473	7.4	10.4
Vienna	44,838	5,143	4,368	8.8	7.9
Aphrodite	40,153	3,751	2,554	10.7	10.9
PXC 221	39,889	5,385	3,070	7.4	9.6
Eclipse	38,508	4,598	3,312	8.4	10.3
r^2	***0.38***	***0.37***	***0.80***	***0.31***	***0.70***
CV	***20***	***20***	***9***	***69***	***7***
LSD	***13,200***	***1,540***	***2,471***	***1.13***	***2.9***

• = data not available.

Summer Squash Trials Reveal No Differences in Total Yield in Alabama

Joe Kemble, Edgar Vinson, Randy Akridge, and Tony Dawkins

A summer squash variety trial was conducted at the Brewton Agricultural Research Unit (BARU) in Brewton and at the Sand Mountain Research and Extension Center (SMREC) in Crossville, Alabama (Tables 1 and 2).

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. For current recommendations for pest and weed control in vegetable production in Alabama, consult your county extension agent or go online to http://www.aces.edu/counties/.

At both locations beds were formed and silver plastic mulch with drip irrigation was used. Squash varieties were direct seeded on May 14 at SMREC and June 3 at BARU. Beds were 20 feet long on five-foot centers at BARU and 20 feet long on six-foot centers at SMREC. At both locations there was a within row spacing of 1.5 feet.

At BARU, fertilization consisted of weekly injections of calcium nitrate and potassium nitrate (alternating) at a rate of 5 pounds N per acre between June 17 and July 19. Various fungicides were applied weekly from June 25 through July 14.

At SMREC, preplant fertilization consisted of 50 pounds N per acre as 5-10-15 on April 19. Fertilization consisted of weekly injections of 12 pounds N per acre as 20-20-20 from June 2 through July 1. Potassium nitrate (at a rate of 6.5 pounds per acre per week) was injected on June 18 through July 15. Weekly applications of fungicides were made between June 8 through June 25.

Table 1. Ratings of 2004 Summer Squash Variety Trials[1]

Location	BARU	SMREC
Weather	4	5
Fertility	5	5
Irrigation	5	5
Pests	4	5
Overall	5	5

[1]See introduction for a description of rating scales.

Squash were harvested three times per week between July 6 through July 23 at BARU, and June 18 through July 14 at SMREC. Squash were graded as marketable and non-marketable according to the United Stated Standards for Grades of Summer Squash (U.S. Dept. Agr. G.P.O 1987-180-916:40730 AMS) (Table 3).

At both locations, 'Prelude II' was among the top varieties along with 'Gentry' and 'Sun Ray'. 'Horn of Plenty' and 'Cougar' consistently produced yields that were significantly lower than most other varieties. There were no differences among varieties at either location for total yield (Table 4).

Table 2. Seed Source, Fruit Type, and Relative Earliness of Selected Squash Varieties

Variety	Type	Seed source	Days to harvest	Disease claims[1]	Years evaluated
Cougar*	F1	Harris Moran	—	CMV, WMV, ZYMV	02,04
Destiny III	F1	Seminis	—	MV, WMV, ZYMV	97-01,04
Fortune*	F1	Novartis	39	—	99,04
Gentry	F1	Novartis	43	—	95-99,02-04
Horn of Plenty	F1	Hollar	—	—	98,02,04
Lioness	F1	Harris Moran	—	CMV, WMV, ZYMV	04
Prelude II	F1	Seminis	40	PM, WMV, ZYMV	97-01,03,04
Sunray*	F1	Seedway	—	CMV, PM, WMV	03,04

[1] Disease claims: PM = Powdery Mildew; CMV = Cucumber Mosaic Virus; ZYMV = Zucchini Yellow Mosaic Virus, WMV = Watermelon Mosaic Virus.

[2] — = none; from seed catalogues. * Precocious variety.

Table 3. Early Yield[1] of Selected Summer Squash Varieties, 2004

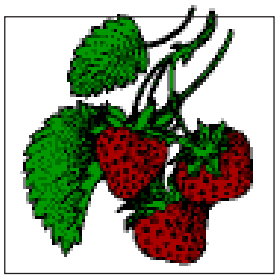
Variety	Early marketable yield *lbs/ac*
Sand Mountain Research and Extension Center	
Destiny III	16,798
Fortune	15,446
Gentry	14,965
Prelude II	14,720
Sunray	13,186
Lioness	12,623
Horn of Plenty	12,533
Cougar	11,144
r^2	*0.35*
CV	*20*
LSD	*4,030*
Brewton Agricultural Research Unit	
Gentry	4,225
Lioness	3,212
Sun Ray	3,131
Prelude II	3,080
Fortune	2,352
Cougar	2,160
Horn of Plenty	2,059
Destiny III	2,009
r^2	*0.50*
CV	*36*
LSD	*1,553*

[1] Early yield consisted of the first three harvests.

Table 4. Total Production of Selected Summer Squash Varieties, 2004

Variety	Total marketable yield *lbs/ac*	Individual fruit weight *lbs*	Cull weight *lbs/ac*
Sand Mountain Research and Extension Center			
Prelude II	46,718	0.39	448
Fortune	45,164	0.37	1,116
Destiny III	44,123	0.42	1,715
Cougar	43,614	0.40	871
Sun Ray	43,542	0.37	968
Gentry	43,088	0.40	1,997
Horn of Plenty	37,189	0.40	363
Lioness	31,799	0.55	2,332
r^2	*0.30*	*0. 51*	*0.40*
CV	*19*	*15*	*85*
LSD	*11,795*	*0.09*	*1,564*
Brewton Agricultural Research Unit			
Gentry	6,224	0.23	—
Prelude II	6,102	0.24	—
Lioness	5,442	0.30	—
Sun Ray	5,254	0.23	—
Fortune	5,005	0.26	—
Cougar	4,462	0.49	—
Destiny III	4,174	0.23	—
Horn of Plenty	3,391	0.21	—
r^2	*0.30*	*0.30*	
CV	*34*	*58*	
LSD	*2,464*	*0.23*	

— = data not available



2002 Strawberry Evaluation Yields Promising Cultivars for Central Alabama

Robert Boozer, Randy Akridge, and Jim Pitts

In Alabama, like many other areas, plasticulture strawberry production began with the cultivar 'Chandler'. In the past several years 'Camarosa' has increased in popularity, especially in the southern half of the state. Not only are different varieties available but also different plant types, such as fresh dug green leaf, fresh dug trimmed, and plug plants. These newer cultivars allow growers to diversify their plantings, which might provide more uniform volume of fruit during the season, reduce disease risk, and improve profit potential.

In the fall of 2001, two locations were selected to evaluate five strawberry cultivars. At the Chilton Research and Extension Center, CREC, in central Alabama the study area was set up on a Bama silt loam soil. Varieties 'Chandler', 'Camarosa', 'Gaviota', 'Aromas', 'Strawberry Festival' (Canadian source, fresh dug) and 'Chandler' (California, trimmed) were planted. The second location was the Brewton Agriculture Research Unit, BARU, in south Alabama where each of the five cultivars were planted on a Benndale fine sandy loam. 'Chandler' trimmed plants were not included at BARU.

Beds were 30 inches wide, six inches high, and on five-foot centers. At both location, methyl bromide:chloropicrin 67/33 was applied at 250 pounds per acre in row treatment, and drip irrigation and plastic mulch was laid using Kennco equipment. Bare-root plants were planted on staggered double rows at a spacing of 14 inches within row and 12 inches between rows. Planting dates at CREC were October 8 for 'Chandler', 'Camarosa', 'Gaviota'; October 12 for 'Chandler' trimmed; and October 24 for 'Strawberry Festival'. Planting dates at BARU were October 8 for 'Chandler', 'Camarosa', and 'Gaviota' and October 26 for 'Aromas' and 'Strawberry Festival'.

In central Alabama, at CREC, 500 pounds of 13-13-13 were broadcast prior to forming beds. Nitrogen injections of seven pounds N per acre began in February and continued through the middle of May. CREC total season fertilization consisted of 156, 65, and 65 pounds N, K_2O, and P_2O_5 per acre, respectively. Fungicide applications were applied weekly starting in March and continued through May 15.

In south Alabama, at BARU, one ton dolomitic limestone and 400 pounds 13-13-13 were applied per acre prior to forming beds. Additional N was injected during the season through the drip irrigation system. Potassium was injected twice as potassium nitrate for a total of 35 pounds additional K_2O. Season total of N, P_2O_5, and K_20, of 209, 52, and, 87 pounds per acre, respectively, were applied at BARU. Fungicide applications began in November and continued through early May.

First harvest began on January 9 and ended on May 16 at BARU and began on April 12 and ended on May 17 at CREC. Fruit were harvested and divided into marketable and non-marketable categories and weighed. In addition, a 25-count marketable fruit sub-sample from each cultivar and plant type was weighed to determine average fruit weight (Table 1).

Overall yields were higher in south Alabama than in central Alabama. The cultivars 'Chandler' and 'Gaviota' were highest yielding for CREC and BARU, respectively. Very little difference among yields was noticed for the other cultivars with the exception of 'Aromas' which was significantly lower than other cultivars at BARU. Comparisons of 'Chandler' and 'Camarosa', the industry standards, produced similar results at both locations. Some interesting results from new varieties emerged from this evaluation. The warmer climate in south Alabama favored 'Gaviota' and 'Strawberry Festival' over standard cultivars, and 'Aromas' appears to be better suited to the cooler climate experienced in central Alabama. In looking at plant types, 'Chandler' green top plants yielded higher than 'Chandler' trimmed plants at CREC. Total marketable yields, however, are not the only consideration to make in selection of a cultivar.

Percent marketable fruit is a very important consideration to make in cultivar selection, especially for u-pick operations. Yield efficiency, disease pressure, and overall field sanitation are affected by percent marketable fruit. Newer varieties had higher percent marketable fruit at both locations over the 'Chandler' green top standard. Percent marketable fruit was generally highest for all cultivars at BARU compared to CREC likely due to climatic

differences in the two locations. Trends at both locations were similar with the exception of 'Camarosa' which performed similar to newer cultivars at CREC. 'Chandler' trimmed plants, while lower yielding than 'Chandler' green top plants, had higher percent marketable fruit. This is likely one of the reasons more strawberry plantings are moving away from 'Chandler' green top plants.

Cultivar diversification can be used to reduce the sharp harvest peak often experienced with a mono-cultivar planting. Total seasonal harvests were divided into early, mid, and late harvest periods by approximately one third intervals for both locations to evaluate potential for diversified plantings (Table 2).

Harvest period yields, were more consistent at CREC than at BARU. The lack of strong peaks, especially during the mid-harvest period at CREC would not warrant major consideration of harvest period yields based on this evaluation. However, at BARU, the harvest period yields for 'Gaviota', 'Camarosa', and 'Chandler' were higher in the early period than 'Strawberry Festival' and 'Aromas'. Late season harvest period yields were lowest for 'Aromas' at BARU as was total marketable yield and does not offer a benefit in that location. Based on harvest period yields at BARU, the varieties, 'Camarosa' and 'Strawberry Festival' would compliment each other well.

Table 1. Strawberry Variety Evaluation

	Marketable Yield *lbs/ac*	Individual Fruit Wt. *g*	Non-Marketable Yield *lbs/ac*	Percent Marketable
Brewton Agricultural Research Unit [1]				
Aromas	7,433	18.6	5,254	58.6
Camarosa	9,978	20.2	12,625	44.1
Chandler	10,134	17	12,404	45
Gaviota	16,149	20.2	6,698	70.7
Strawberry Festival	11,514	17.7	4,825	70.5
r^2	***0.84***	***0.66***	***0.88***	
CV	***16.3***	***18.8***	***6.9***	
LSD	***906***	***1.6***	***791***	
Chilton Research and Extension Center [2]				
Aromas	8,750	16.9	9,761	47.3
Camarosa	8,632	17.5	9,439	47.8
Chandler	10,009	17.1	13,181	43.2
Chandler (trim)*	6,645	16.3	6,699	49.8
Gaviota	7,174	17.9	7,436	49.1
Strawberry Festival	6,892	16.2	7,375	48.2
r^2	***0.51***	***0.44***	***0.62***	
CV	***20***	***6***	***25***	
LSD	***1,006***	***1.5***	***1,416***	

[1] All plants were fresh dug, green top.
[2] All plants were fresh dug, California trimmed.

Table 2. Strawberry Harvest Period Evaluation,

Variety	Harvest Period* Early	Mid	Late	Total
	Marketable Yield *(lbs/ac)*			
Brewton Agricultural Research Unit [1]				
Gaviota	4,901	8,392	2,856	16,149
Camarosa	3,639	3,604	2,755	9,998
Chandler	3,140	4,911	2,082	10,133
StrwFest	2,592	6,806	2,116	11,514
Aromas	1,073	5,383	977	7,433
r^2	***0.73***	***0.76***	***0.72***	***0.84***
CV	***32.0***	***24.5***	***26.7***	***16.3***
LSD	***497***	***715***	***289***	***906***
Chilton Research and Extension Center [2]				
Aromas	2,576	3,302	2,872	8,750
Camarosa	2,238	3,155	3,239	8,632
Chandler	3,215	3,675	3,119	10,009
Chandler (trim)	1,420	2,414	2,811	6,645
Gaviota	2,263	2,826	2,086	7,174
Strawberry Festival	2,250	2,455	2,167	6,872
r^2	***0.57***	***0.55***	***0.57***	***0.51***
CV	***28.7***	***21.0***	***20.2***	***20***
LSD	***419***	***392***	***345***	***1,006***

[1] Harvests 1-9 (early), 10-18 (mid), 19-27 (late).
[2] Harvests 1-3 (early), 4-7 (mid), 8-11 (late).

New varieties 'Gaviota' and 'Strawberry Festival' should be evaluated by growers in south Alabama as a substitute for standard varieties or in conjunction with these varieties. Central Alabama growers, who have moved more production from 'Chandler' over to 'Camarosa', need to take a look at 'Aromas'.

Tomato Varieties Resistant to Tomato Spotted Wilt Included in Alabama Trials

Joe Kemble, Edgar Vinson, Randy Akridge, and Arnold Caylor

A spring tomato variety trial was conducted at the Brewton Agricultural Research Unit (BARU) in Brewton, Alabama, and the North Alabama Horticulture Research Center (NAHRC) in Cullman, Alabama (Tables 1 and 2). Six-week-old tomato transplants were established on June 17 at BARU and May 3 at NAHRC. At both locations tomato seedlings were transplanted into 20-foot long plots, at a within row spacing of 1.5 feet.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. For current recommendations for pest and weed control in vegetable production in Alabama, consult your county extension agent online at http://www.aces.edu/counties/.

At BARU, 75 pounds of nitrogen per acre as ammonium nitrate was applied preplant. After planting, beds received weekly, alternate injections of calcium nitrate (at a rate of 10 pounds of nitrogen per acre) and potassium nitrate (at a rate of 20 pounds of nitrogen per acre) between June 17 and July 11. Pesticides were applied twice weekly from June 28 through August 11.

At NAHRC, preplant fertilization consisted of 80 pounds per acre of N as ammonium nitrate. Fertilization consisted of weekly injections of ammonium nitrate at a rate of 10 pounds of N per acre. Pesticides were applied weekly.

Table 1. Ratings of 2004 Tomato Variety Trials[1]

Location	BARU	NAHRC
Weather	5	5
Fertility	5	5
Irrigation	5	5
Pests	5	5
Overall	5	5

Tomatoes were harvested, weighed, and graded weekly between August 1 and September 13 at BARU and July 16 through August 23 at NAHRC (Table 3). Grades and corresponding fruit diameters (D) of fresh market tomato were adapted from the *Tomato Grader's Guide* (Circular ANR 643 from the Alabama Cooperative Extension System) and were Jumbo (D> 3.5 inch), extra-large (D>2.9 inch), large (D>2.5 inch) and medium (D>2.3 inch). Marketable yield was the sum of extra-large, large and medium grades (Table 3).

Table 2. Seed Source, Fruit Characteristics, and Relative Earliness of Selected Tomato Varieties

Variety	Type[1]	Seed source	Plant habit[2]	Fruit color	Days to harvest	Disease claims[3]	Years evaluated
Amelia	F1/FM	Harris Moran	Det	Red	—[4]	**FW,TSWV,VW	03,04
BHN 640	F1/FM	BHN	Det	Red	75	**FW,TSWV,VW	03,04
Carolina Gold	F1/FM	Novartis	Det	Yellow	75	* FW,VW	99,03,04
Florida 47	F1/FM	Seminis	Det	Red	75	ASC,FW,St,VW	97-99,02-04
Florida 91	F1/FM	Seminis	Det	Red	72	ASC,FW,St,VW	02-04
Sebring	F1/FM	Novartis	Det.	Red	75	FCR,**FW,St,VW	04
Leila	F1/FM	Rogers	Det.	Red	—	VW, FW*, St	04
Mountain Crest	F1/FM	Sun Seeds	Det.	Red	75	*FW,VW	04

[1] Type: F1 = Hybrid; FM = Fresh Market.
[2] Plant habit: Det = Determinate.
[3] Disease claims: FCR = Fusarium Crown Rot; FW = Fusarium Wilt; VW = Verticillium Wilt; ASC = Alternaria Stem Canker; St = Stemphylium (gray leaf spot); TSWV = Tomato Spotted Wilt Virus; * = Races 1 and 2; ** = Races 1, 2, and 3.
[4] — = not available; from seed catalogues.

At BARU, 'BHN 640' and 'Mountain Crest' produced yields that were statistically similar to the market standards 'Florida 91' and 'Florida 47'. At NAHRC, 'BHN 640' had the highest yield though there were no differences among varieties overall in total marketable yield.

Table 3. Performance of Selected Tomato Varieties

Variety	Marketable yield[1]	Extra large		Large		Medium		Cull	Individual fruit wt.
	lbs/ac	number *no/ac*	yield *lbs/ac*	number *no/ac*	yield *lbs/ac*	number *nos/ac*	yield *lbs/ac*	*lbs/ac*	*lbs*
Brewton Agricultural Research Unit									
BHN 640	31,681	24,593	17,450	23,686	11,531	8,168	2,700	7,863	0.56
Mountain Crest	30,437	15,428	9,709	30,674	14,403	19,602	6,324	5,284	0.47
Florida 91	30,124	21,689	14,154	26,862	12,350	10,981	3,619	4,769	0.51
Florida 47	29,991	17,333	11,014	29,585	13,534	16,426	5,443	5,730	0.48
Carolina Gold	26,204	19,511	12,631	23,414	10,470	9,166	3,103	8,367	0.50
Leila	25,465	9,529	6,058	32,398	14,256	16,335	5,151	4,150	0.44
Amelia	24,317	19,511	13,496	18,604	8,666	6,443	2,155	5,951	0.55
Sebring	23,373	18,876	12,301	19,330	9,189	5,990	1,882	5,097	0.53
r^2	***0.50***		***0.70***						
CV	***13***		***22***						
LSD	***5,206***		***3,823***						
North Alabama Horticulture Research Center									
BHN 640	44,068	3,751	2,742	19,542	9,884	36,542	31,442	8,416	0.70
Leila	36,633	9,196	7,140	24,019	12,517	35,816	16,975	6,565	0.53
Amelia	33,559	5,627	4,349	24,321	13,563	34,667	15,647	7,008	0.52
Florida 47	32,832	4,235	3,222	17,001	8,960	46,646	20,650	10,304	0.48
Sebring	32,127	5,203	7,791	18,634	9,871	31,702	14,465	7,389	0.57
Mountain Crest	31,312	7,744	5,881	20,147	11,092	29,766	14,340	7,593	0.54
Mountain Fresh	31,182	6,232	4,609	19,360	9,996	34,848	16,578	8,249	0.52
Florida 91	27,995	5,445	4,240	18,997	9,172	31,884	14,584	8,454	0.49
Carolina Gold	27,734	3,025	2,174	16,456	8,580	38,115	16,981	8,218	0.48
r^2	***0.20***		***0.30***						
CV	***38***		***73***						
LSD	***18,275***		***4,935***						

[1]Marketable yield is the sum of extra-large, large, and medium fruit.

Seedless Watermelon Trial Exhibits High Yield and Good Quality for Alabama

Joe Kemble, Edgar Vinson, and Arnold Caylor

A seedless watermelon trial was conducted at the North Alabama Horticulture Research Center (NAHRC) in Cullman, Alabama (Tables 1 and 2).

On April 30, four-week-old seedless watermelon transplants were set on silver plastic mulch. Seedless watermelons were transplanted rather than direct seeded because of the low germination rate of seedless watermelons. A seeded variety, 'Companion', was used as a pollinator. One pollinator was planted for every three seedless transplants to insure proper pollenation.

Soils were fertilized according to the recommendations of the Auburn University Soil Testing Laboratory. For current recommendations for pest and weed control in vegetable production in Alabama, consult your county extension agent online at http://www.aces.edu/counties/.

Ammonium nitrate was applied preplant. Fertilization consisted of weekly injections of six pounds of N per acre as calcium nitrate. Fungicides were applied starting one week after planting and continued through harvest.

Watermelons were harvested on July 19 and were graded according to the Watermelon Grader's Guide (Circular ANR-681 from the Alabama Cooperative Extension System) and marketable yield was determined. Two melons from each plot were used to measure soluble solids (sweetness), hollow heart, and rind thickness. A hand-held refractometer was used to measure soluble solids.

Table 1. Ratings of 2004 Watermelon Variety Trial[1]

Location	NAHRC
Weather	5
Fertility	5
Irrigation	5
Pests	5
Overall	5

[1]See introduction for a description of rating scales.

Similar to last year's seedless watermelon trial, most varieties in the trial had marketable yields that were similar to the standard variety 'Tri-X-313'. 'Revolution' had yields that were significantly lower than all other varieties.

Watermelons with soluble solids reading below 10^0 Brix do not taste sweet. No variety had readings below 11.6. Rind thickness is an indicator of how well a watermelon can endure shipping. Rind thickness of 'Tri-X-313' was highest but was similar to all other varieties except 'Liberty', 'Constitution', and 'Millennium' which had the lowest rind thickness. Hollow heart occurs when a space or fissure develops at the center (heart) of the watermelon. If a watermelon is found to have hollow heart, the length of the fissure is then measured. Watermelons with an excessive incidence of hollow heart are not desirable. When present, hollow heart was exhibited most notably in 'Freedom' averaging 1.38 inches in length. Overall the incidence of hollow heart was minimal and there were no significant differences found among varieties.

Table 2. Seed Source, Fruit Characteristics, and Relative Earliness of Selected Watermelon Varieties

Variety	Seed source	Fruit shape	Flesh color	Days to harvest	Disease claims[1]	Years evaluated
Constitution	Seedway	Blocky	Red	87	ANT,FW	02-04
Freedom	Sunseeds	Blocky	Red	87	FW*	02-04
Liberty	Sunseeds	Oval	Red	85	—	04
Millennium	Harris Moran	Round	Red	78	—	04
Revolution	Sunseeds	Blocky	Red	83	FW*	02-04
Sun Ray	Sunseeds	Round	Yellow	87	—	04
Triple Crown	Seedway	Oblong	Red	85	—	04
Tri-X-313	American Sun Melon	Oblong	Red	85	—	96-98,03

[1] Disease claims: ANT = Anthracnose; FW = Fusarium Wilt; *Race 1 only.
— = not available from seed catalogs.

Table 3. Performance of Selected Seedless Watermelon Varieties, North Alabama Research and Extension Center

Variety	Marketable yield *lbs/ac*	Marketable fruits *no/ac*	Individual fruit weight *lbs*	Hollow heart *in*	Rind thickness *in*	Soluble solids *brix*
Millennium	32,138	2,110	15.37	0.13	1.19	11.9
Tri-X-313	31,096	1,762	17.96	0.13	2.25	11.7
Triple Crown	30,643	1,653	18.49	0.38	1.41	12.1
Constitution	29,341	1,914	15.34	0.50	1.25	12.1
Freedom	27,904	1,631	17.49	1.38	1.50	12.0
Liberty	27,717	1,588	17.67	0.38	1.31	11.6
Sun Ray	26,474	1,784	14.85	0.88	1.38	12.1
Revolution	21,109	1,131	18.82	0.25	1.38	11.9
r^2	***0.40***	***0.43***	***0.60***	***0.21***	***0.30***	***0.10***
CV	***18***	***21***	***9***	***177***	***43***	***7***
LSD	***7,309***	***519***	***2.15***	***1.3***	***0.92***	***1.15***

Evaluation of Grano Onion Varieties for Southeast Georgia

George E. Boyhan, Robert Boland, and Randy Hill

Onions are an important part of the agriculture industry in southeast Georgia with the production of Vidalia onions. These mild short-day onions are produced as an overwintering crop within a specific region in southeast Georgia. Growers not within this region or "onion belt" are not allowed to use the Vidalia name.

Because there are growers in south Georgia who are interested in producing short-day onions that are not currently grown in this region, other short-day onions have been proposed for production. While Vidalia onions are noted for their distinct slightly flattened shape that is unique to the Granex-type onion, these other short-day onions have a more rounded shape and are known as Grano-type onions.

An experiment was conducted at the Vidalia Onion and Vegetable Research Center in Lyons, Georgia, to evaluate several of these Grano-type onions for production in south Georgia (Table 1). Previous experiments with these onions have shown they can be successfully grown in south Georgia, although they tend to mature later under our production practices and consequently are more susceptible to late season bacterial diseases.

Table 1. Ratings of 2004 Grano Onion Variety Trial[1]

Location	Vidalia Onion and Vegetable Research Center
Weather	5
Fertility	5
Irrigation	5
Pests	2-3
Overall	4
Water-holding capacity (in/in)	0.06-0.15
Soil type	Tifton loamy sand

[1]See introduction for a description of rating scales.

Seed for this trial were sown in high-density plantings or plantbeds on September 14, 2003 and were transplanted to their final spacing on November 24, 2003. Beds prepared on six-foot centers were planted with transplants with a final spacing of 12 inches between rows and 5.5 inches in the row. Plot size was 10 feet of bed planted to the final spacing in a randomized complete block design with four replications. Weed, insect, and disease control followed University of Georgia Cooperative Extension Service recommendations. Onions were harvested on May 6 and 13, 2004 based on variety maturity.

Yield for the 15 varieties in the trial is summarized in Table 2. Two of the varieties were red onions, 'Mata Hari' and 'Arizona Sunset'.

Table 2. Summary of Grano Onion Yield, 2003-2004

Entry	Company	Field Yield[1] *lbs/plot*	Jumbos[1] *lbs/plot*	Mediums[1] *lbs/plot*
EX 07593001	Seminis	93.9	62.0	0.4
Don Victor	Nunhems (Sunseed)	91.9	76.6	0.2
Nikita	Nunhems (Sunseed)	77.1	47.8	0.4
Sweet Magnolia	D. Palmer Seed Co.	75.4	31.4	0.6
Linda Vista	Seminis	75.3	38.4	0.5
Mata Hari	Nunhems (Sunseed)	73.8	43.6	0.7
Pumba (DPSX 1029)	D. Palmer Seed Co.	70.5	36.0	0.0
Chula Vista	Seminis	65.5	50.8	0.5
Safari	Nunhems (Sunseed)	65.0	54.3	1.2
Sweet Sunrise	Nunhems (Sunseed)	63.5	48.7	0.8
Texas Grano 1015Y	Seminis	63.2	39.7	0.1
Prowler	Nunhems (Sunseed)	60.7	53.4	2.2
Timon	D. Palmer Seed Co.	60.4	48.1	1.3
Arizona Sunset	D. Palmer Seed Co.	52.2	37.0	2.2
Sherita	D. Palmer Seed Co.	32.7	17.6	4.2
CV		***10%***	***23%***	***75%***
LSD [2]		***9.3***	***14.7***	***1.1***

[1]Multiple entry by 14.52 to convert to 50-lb bags/acre.
[2] Fisher's Protected LSD ($p<0.05$)

The remainder of the entries were yellow onions. The highest total yielding entry was EX 07593001 from Seminis with 93.9 pounds per plot, which differed significantly from 'Nikita'. The highest yielding entry for jumbos was 'Don Victor' with 76.6 pounds per plot, which was significantly greater than 'Safari' with 54.3 pounds per plot.

As with past experiments, Grano onions matured later than many of the Granex types grown in southeast Georgia. 'Sherita' in particular showed a high level of susceptibility to bacterial diseases that is reflected in low yields.

For growers, who are not in the onion belt and wish to grow short-day onions, many of these varieties would be suitable.

Vidalia Onion Variety Trial in Georgia, 2003-2004

George E. Boyhan, Reid L. Torrance, Ronnie Blackley, Jeff Cook, Randy Hill, and Thad Paulk

The Vidalia onion variety trial was held at the Vidalia Onion and Vegetable Research Center in Lyons, Georgia, Thirty-five varieties and two observational varieties were entered in the trial. Seed were sown on September 15, 2003 in a high-density planting (30 to 70 seed per linear foot) with a Monsem vacuum planter. Plants were lifted, had 50 percent of the tops removed, and were transplanted to their final spacing on November 17, 2003. Final spacing consisted of four rows set on raised beds formed on six-foot centers. Rows were 12 inches apart with plants set 5.5 inches apart in-row. Fertilization, insect, disease, and weed control followed University of Goergia's Cooperative Extension Service recommendations. Onions were irrigated as needed from a portable pipe overhead irrigation system.

The experimental design was a randomized complete block design with four replications. Each experimental unit consisted of the particular variety planted on 35 feet of bed. Seedstems and doubles were recorded from the entire 35-foot bed on April 2, 2004. The six harvest dates included April 5, April 12, April 19, April 26, May 3, and May 10, 2004. Twenty-five feet of each plot were harvested on the dates indicated and left in the field for two days prior to clipping and bagging. Weights were recorded in the field after clipping and bagging. Onions harvested from April 5 to 19 were heat cured for 48 hours at 95°F.

Table 1. Ratings of 2004 Vidalia Onion Variety Trial[1]

Location	Vidalia Onion and Vegetable Research Center
Weather	5
Fertility	5
Irrigation	5
Pests	3-4
Overall	5
Water-holding capacity (in/in)	0.06-0.15
Soil type	Tifton loamy sand

[1]See introduction for a description of rating scales.

Onions harvested from April 26 to May 10 were not subjected to heat curing to minimize problems with warm weather bacterial diseases.

Harvested onions from each plot were graded into jumbo (> 3 inches) or medium (> 2 inches and < 3 inches) sizes and weighed. Finally, a ten bulb sample of jumbo onions from each experimental unit was combined and analyzed for pyruvate and soluble solids.

'XON-303Y' from Sakata Seed had the highest field weight at 1,235 50-pound bags per acre (Table 2). This was significantly greater than 'Southern Honey' or any variety with a lower field yield. The graded yield (jumbos

Table 2. Summary of Grano Onion Yield, 2003-2004

Entry	Company	—Evaluated 4/2/04— Doubles	Seedstems	Harvest date	Field weight	Jumbos	Mediums	Pyruvate	Soluble solids
					50-lb bags/ac			*um/gfs*	*%*
XON-303Y	Sakata	4	0	5/10/04	1235	787	10	4.5	7.7
Exp. Yel. Granex 15082	Dessert Seed	4	10	5/10/04	1229	623	7	3.7	8.2
SRO 1001	Sunseeds	1	11	5/10/04	1206	758	8	3.0	8.1
Century	Seminis	1	4	5/10/04	1198	638	4	3.9	8.6
WI-3115	Wannamaker	20	3	4/12/04	1174	1005	8	3.4	8.2
XON-204Y	Sakata	9	21	5/3/04	1164	785	10	4.3	9.2
WI-609	Wannamaker	19	9	4/19/04	1149	677	8	3.0	8.7
Exp. Yel. Granex 15094	Dessert Seed	1	21	5/10/04	1101	485	8	3.7	8.4
DPS 1318	D. Palmer Seed	35	48	5/10/04	1060	536	16	3.5	8.5

continued

Table 2, continued. Summary of Grano Onion Yield, 2003-2004

Entry	Company	—Evaluated 4/2/04— Doubles	Seedstems	Harvest date	Field weight	Jumbos	Mediums	Pyruvate	Soluble solids
					50-lb bags/ac			*um/gfs*	*%*
Ohoopee Sweet	D. Palmer Seed	91	90	5/10/04	1043	426	26	4.3	8.6
Southern Honey	D. Palmer Seed	112	121	5/10/04	981	417	31	3.4	8.9
Pegasus	Seminis	1	12	5/10/04	979	329	6	4.2	9.0
XON-202Y (99C 5092)	Sakata	3	11	5/10/04	976	426	10	3.8	8.5
XON-203Y (01ZG 5034)	Sakata	5	60	4/26/04	929	683	10	3.6	9.0
Rosali (Red)	Bejo	44	29	5/10/04	923	374	22	3.4	9.1
Granex EM90	Clifton Seed	2	61	5/10/04	918	414	5	4.1	8.1
Exp. Yel. Granex 15085	Dessert Seed	2	109	5/10/04	917	356	8	3.4	7.6
SSC-1600	Shamrock	8	9	4/12/04	916	767	16	4.0	10.0
WI-129	Wannamaker	39	12	4/5/04	908	704	39	3.8	8.4
SSC 1535	Shamrock	8	7	4/12/04	899	781	26	4.2	10.0
606DY	Shaddy	4	4	4/5/04	878	683	21	3.8	8.3
SSC 33076	Shamrock	3	3	4/5/04	858	778	22	3.6	8.5
Sapelo Sweet	D. Palmer Seed	58	45	5/3/04	857	566	21	4.3	8.9
DPSX 1290	D. Palmer Seed	55	108	5/10/04	810	342	15	3.5	8.9
72766DY	Shaddy	20	5	4/5/04	804	742	27	3.6	8.5
Cyclops	Seminis	4	18	5/3/04	801	443	14	3.6	8.6
Mr Buck	D. Palmer Seed	19	52	5/3/04	800	391	19	4.5	8.7
Georgia Boy	D. Palmer Seed	99	91	5/3/04	754	339	42		
Granex 33	Seminis	3	35	5/3/04	734	371	12	4.6	8.8
Exp. Yel. Granex 34140	Dessert Seed	2	55	5/10/04	702	391	19	4.0	7.8
Savannah Sweet	Seminis	12	38	5/3/04	699	391	21	4.3	8.1
Granex Yellow PRR	Seminis	5	38	5/3/04	678	419	19	4.1	9.3
SSC 6371 F1 (Sugar Belle)	Shamrock	5	4	4/19/04	631	463	184.3	10.2	
SSC 6372 F1	Shamrock	12	97	5/3/04	564	313	8	4.2	10.1
Sweet Vadilia	Sunseeds	24	123	5/3/04	433	199	22	3.5	8.1
CV		***32%***	***28%***		***15%***	***26%***	***53%***	***12%***	***5%***
LSD*		***5***	***8***		***252***	***259***	***16***	***0.8***	0.8
				Observational					
Tsubame	Yae Nogei Co.	7	58	4/19/04	1096	747	6		
Nozomi	Yae Nogei Co.	3	5	4/19/04	1185	978	11		

*Bonferonni adjustment for five comparisons.; Fisher's Protected LSD (p=0.05).

and mediums) for 'XON-303Y' was only 65 percent of the field yield.

The highest yielding variety for jumbo yields was 'WI-3115' with 1005 50-pound bags per acre, which was significantly better than 72766DY or any other variety with lower jumbo yields. 'WI-3115' had 86 percent of its field yield marketable.

Seedstems were particularly problematic this year because of cool temperatures in March followed by warmer temperatures. This coupled with larger plants can trigger flowering. Although environmental factors are more important with seedstem formation, variety does play an important role. Doubles are also affected by environmental factors particularly adverse growing conditions that can affect the growing point resulting in more than one bulb. Seedstems ranged from 0 to 123 per plot with 'Sweet Vidalia' having the largest number of seedstems and 'XON-303Y' having none. For doubles the range was 1 to 112 per plot. D. Palmer Seed had many of their entries with high numbers of doubles. 'Pegasus', 'Century', 'Exp. Yel. Granex 15094' and 'SRO 1001' all averaged 1 double per plot.

Pyruvate analysis ranged from 3.0 to 4.6 umol/grams fresh weight (gfw) which is somewhat higher than in some years, but within the expected range for Vidalia onions. Soluble solids, which is the percent sugar, ranged from 7.6-10.2, which is higher than what is normally seen in onions.

Overall the trials went very well this year with few problems. The number of seedstems and doubles was greater than average due to cool weather in March. Remember to exercise care when interpreting a single year's data.

Watermelon and Cantaloupe Variety Trials in Georgia, 2004

George E. Boyhan, Darby Granberry, Randy Hill, and Thad Paulk

Watermelon and cantaloupe variety trials were conducted at the Vidalia Onion and Vegetable Research Center near Reidsville, Georgia, in Toombs County. There were 36 entries in the watermelon trial and seven in the cantaloupe trial. Plants were produced in a local greenhouse, seeded on April 7, 2004, and transplanted to the field on May 18, 2004.

Fields were prepared according to University of Georgia Cooperative Extension Service recommendations for watermelon and cantaloupe production. Seven hundred fifty pounds per acre of 10-10-10 fertilizer was preplant incorporated and an additional 750 pounds per acre of 10-10-10 was applied approximately four weeks later just prior to vine coverage. Weed control followed University of Georgia Cooperative Extension Service recommendations; however, no disease or insect control measures were taken.

The experiments were arranged as randomized complete block designs with four replications. Watermelons were planted with an in-row spacing of five feet and a between row spacing of six feet. Each plot (experimental unit) consisted of 10 plants. In the cantaloupe experiment, plants had a three-foot in-row spacing and a six-foot between-row spacing with 10 plants per plot.

Table 1. Ratings of 2004 Watermelon and Canteloupe Variety Trials[1]

Location	Vidalia Onion and Vegetable Research Center
Weather	5
Fertility	5
Irrigation	5
Pests	3-4
Overall	4
Water-holding capacity (in/in)	0.06-0.15
Soil type	Tifton loamy sand

[1]See introduction for a description of rating scales.

Watermelons were harvested on July 8 to 9, 2004 and again on July 12, 2004. Cantaloupes were harvested on July 6 and 12, 2004.

Data collected on the watermelon harvest included weight of each individual fruit, as well as the length, width, rind depth, and soluble solids (percent sugar) of two melons cut from each plot. In addition, the color was rated from 1 to 5 with 1 indicating excellent color and 5 indicating poor color. The color assessment attempted to quan-

Table 2. Watermelon Variety Trial, 2004
Vidalia Onion and Vegetable Research Center, Lyons, Georgia

Variety	Company	Description[1]	Yield	——Percent melons per weight class——			
			lbs/ac	<10 lbs	>10-<20 lbs	>20-<30 lbs	>30 lbs
Olé	Willhite	Diploid	54,987	6	72	21	1
Wrigley	Seminis		53,822	14	78	8	0
Sweet Slice	Willhite	Triploid	53,150	18	81	1	0
#7167	Abbott & Cobb	Super Seedless™ Triploid	46,569	14	85	1	0
Jamboree	Rogers	Hybrid	46,076	3	70	25	1
WS Red Seedless MF	Wannamaker	Triploid, round, avg 5-7 kg, firm flesh, less prone to hollow heart	44,573	52	48	0	0
Top Gun	Rogers	Hybrid	43,749	2	62	35	2
WX207	Willhite	Diploid	41,313	2	72	26	0
WX270	Willhite	Triploid (wilt resistant)	40,141	27	72	1	0
WX257	Willhite	Diploid	39,995	9	81	9	0

continued

Table 2, continued. Watermelon Variety Trial, 2004
Vidalia Onion and Vegetable Research Center, Lyons, Georgia

Variety	Company	Description[1]	Yield	——Percent melons per weight class——			
			lbs/ac	<10 lbs	>10-<20 lbs	>20-<30 lbs	>30 lbs
#800 (ACX 5413)	Abbott & Cobb	Summer Flavor® Hybrid	38,964	3	77	20	0
RWT 8145	Rogers	Hyb 3N	37,066	8	83	10	0
PS 80309020	Seminis	Triploid (Smaller Cooperstown type)	36,863	30	70	0	0
WX255	Willhite	Diploid	36,768	3	86	11	0
WX266	Willhite	Diploid	36,739	6	74	19	0
#810 (ACX 5408)	Abbott & Cobb	Summer Flavor® Hybrid	36,278	4	64	32	0
WS Yel Seedless F	Wannamaker	Triploid, yellow, high globe, 5-7 kg, high brix, good shipper	35,000	23	72	3	2
Majestic (XP 4510759)	Seminis	Triploid	34,460	40	59	1	0
Mardi Gras	Rogers	Hybrid	34,191	16	78	6	0
Tri-X 313	Rogers	Hyb 3N	33,665	10	90	0	0
#5244	Abbott & Cobb	Summer Sweet® Triploid	31,211	21	77	1	0
Tri-X Palomar	Rogers	Hyb 3N	29,791	27	73	0	0
RWT 8149	Rogers	Hyb 3N	29,516	100	0	0	0
WS Yel Seedless OS	Wannamaker	Triploid, yellow, globe shape, 4 kg, crisp bright yellow flesh	28,303	57	43	0	0
WS Crimson 166	Wannamaker	Seedless	27,127	54	46	0	0
Sweet Delight	Rogers	Hyb 3N Primed	26,430	25	74	2	0
RWT 8154	Rogers	Hyb 3N	26,049	100	0	0	0
WS Crimson 144	Wannamaker	Seedless	25,258	28	72	0	0
RWT 8162	Rogers	Hyb 3N	24,619	100	0	0	0
WX28	Willhite	Triploid (late)	24,379	12	62	26	0
Cha Cha Cha F1	Shamrock Seed Co.	Seedless	23,758	44	56	0	0
RWT 8155	Rogers	Hyb 3N	23,733	100	0	0	0
WS Orange Palm NQ	Wannamaker	F1 hybrid orange flesh palm, 2.5 kg	17,243	100	0	0	0
Precious Petite	Rogers	Hyb 3N	15,471	99	1	0	0
WS Yel Palm PY	Wannamaker	F1 hybrid, yellow palm, avg 2-3 kg, heat tolerant and resistant to cracking	11,681	100	0	0	0
WS Crimson Palm	Wannamaker	Red, seeded palm, avg 2 kg	9,202	98	2	0	0
CV			***43%***				
LSD[2]			***20,099***				

[1]Description: 2N or diploid = with seeds; 3N or triploid = without seeds.
[2] Fisher's Protected LSD ($p<0.05$)

tify the color quality without bias between dark red-, red-, and yellow-fleshed melons.

The watermelon description in Table 2 is from the seed company's description that was written on the seed packet or that came with the seed. The comments are our comments as noted during melon cutting. Occasionally, there may be discrepancies in these comments, which reflect differences among replications primarily due to variability in the variety.

The yield results of the watermelon trial are summarized in Table 2. Yield ranged from 9,202 pounds per acre for 'WS Crimson Palm' to 54,987 pounds per acre for 'Olé'. The lower yields generally occurred among the smaller fruited watermelons, several of which had 100 percent of their fruit in the below-10-pound class.

The watermelon fruit characteristics are summarized in Table 3. Recently, several seed companies have introduced 'palm' or personal size watermelons. These watermelons are characterized by having weights averaging three to seven pounds. Many are seedless and differ from other small seedless watermelons in having a very thin rind. We tested several in this class from Wannamaker Seed Co. and Rogers Seed Co. There were both seeded and seedless as well as red- and yellow-fleshed varieties among the personal size watermelon tested.

Table 3. Watermelon Fruit Characteristics, 2004
Vidalia Onion and Vegetable Research Center, Lyons, Georgia

Variety	Flesh color	Fruit length *in*	Width *in*	Rind thickness *in*	Soluble solids *%*	Comments
Olé	3.0	13.6	8.4	0.9	10.8	Allsweet
Wrigley	3.0	10.6	7.8	0.9	11.4	Blocky CS, Seedless
Sweet Slice	4.0	10.7	8.6	1.1	11.3	Blocky, Seedless, CS, Yellow
#7167	3.4	11.0	8.3	1.2	11.1	Seedless, Blocky CS
Jamboree	3.0	15.1	7.8	1.0	9.8	Allsweet
WS Red Seedless MF	2.6	8.9	8.1	1.0	11.3	CS, Dark, Seedless, Small
Top Gun	2.4	11.2	9.3	0.8	10.7	CS, Small, blocky
WX207	2.7	17.6	7.8	0.9	10.7	J, Small
WX270	3.8	11.6	7.7	0.9	10.9	CS, Red, Blocky, Allsweet, CS
WX257	2.1	13.8	6.5	0.9	11.1	Allsweet, Jubilee, Seedless, Small CS
#800 (ACX 5413)	3.8	14.8	8.0	1.1	10.0	Allsweet
RWT 8145	2.9	12.4	7.7	1.0	11.1	J small, Seedless, Blocky, CS, Variable
PS 80309020	4.0	10.9	8.0	1.2	11.3	Blocky CS, Seedless
WX255	2.6	13.2	7.7	0.9	9.9	Allsweet
WX266	3.3	16.3	7.4	0.9	10.1	Allsweet
#810 (ACX 5408)	4.0	14.4	8.1	1.1	9.6	Allsweet
WS Yel Seedless F	2.0	10.0	8.8	0.9	11.5	CS, Yellow, Seedless
Majestic (XP 4510759)	3.5	11.1	8.1	1.1	11.0	Blocky CS, Seedless
Mardi Gras	3.4	13.2	7.5	1.0	9.8	Allsweet
Tri-X 313	3.8	10.7	7.8	1.0	11.2	Blocky, CS, Red, Seedless
#5244	3.1	10.9	8.0	1.1	10.9	Seedless, Blocky CS
Tri-X Palomar	3.4	9.9	8.6	1.0	11.1	CS, Dark Stripe, Red, Seedless
RWT 8149	1.4	7.6	6.7	0.5	11.4	Dark, Palm, Sugar Baby, Seedless, Red
WS Yel Seedless OS	2.1	9.4	8.0	0.9	11.4	CS, Small, Yellow, Seedless
WS Crimson 166	2.4	8.8	7.9	0.8	11.3	CS Small, Seedless, not all, Palm, Dark
Sweet Delight	3.6	11.0	8.3	0.9	11.5	Seedless, Pink, Blocky CS
RWT 8154	2.9	7.4	6.3	0.5	11.5	Palm, seedless, red
WS Crimson 144	3.2	9.0	8.5	0.9	10.5	CS Small Seedless
RWT 8162	3.0	6.9	6.2	0.5	11.5	Palm, Red, Yellow rind, Seedless
WX28	4.4	14.4	7.4	1.1	9.6	Small Jubilee, Seedless, Not all
Cha Cha Cha F1	3.4	10.3	8.1	1.3	11.0	Blocky CS Seedless
RWT 8155	1.5	7.3	6.2	0.5	12.0	Palm, seedless, red
WS Orange Palm NQ	1.8	8.6	6.1	0.4	10.9	Palm, Yellow, Seeded
Precious Petite	2.4	7.3	6.7	0.5	11.1	Palm, red, seedless
WS Yel Palm PY	1.8	7.5	6.4	0.5	10.2	Yellow, Palm, Seeded, Breaks easily
WS Crimson Palm	3.1	6.9	6.0	0.4	10.5	Palm, Seeded, Breaks easily
CV				***9%***		
LSD [1]				***1.4***		

[1] Fisher's Protected LSD ($p<0.05$)

Only four entries had any melons in the larger-than-30-pound class. These varieties only had 1 to 2 percent of their melons in this size. The majority of entries had melons in the 10-to-20-pound class. This reflects the demand in the commercial market for small- to medium-size melons.

There continues to be a wide selection of watermelons from several different seed companies available in Georgia. No single variety dominates the market. Seeded and seedless watermelons, which vary in size and rind type, continue to be grown in Georgia. Personal melons have found a niche but are primarily being marketed directly by seed companies under contract production or exclusive release. This marketing method will garner higher profits for the seed companies but may also reflect the fact that personal melons tend to have lower yields making it difficult for growers to make money on a per pound basis with these melons.

The results of the cantaloupe trial are summarized in Table 4. There were no statistically significant differences among the varieties in the trial. All were Athena type melons with the exception of WS-SP04, which we character-

ized as a honeydew. The seed company descriptor indicated it is a Sprite-type, but the fruit were larger than a typical sprite melon.

No soluble sugars are reported this year for cantaloupe because the fruit were immature at harvest. In the past, southern blight has infected the fruit immediately upon ripening particularly since cantaloupe are grown on bare ground. To combat this problem, cantaloupe were harvested earlier than usual; however, the fruit never matured sufficiently postharvest to get an accurate reading of soluble sugars. Otherwise, the harvest reflects the potential for these varieties since the fruit had sized sufficiently.

Table 4. Cantaloupe Variety Trial, 2004
Vidalia Onion and Vegetable Research Center, Lyons, Georgia

Variety	Company	Description	Yield *no/ac*	Yield *lbs/ac*	Length *in*	Weight *in*	Flesh depth *in*
Athena	Rogers	Hybrid	7,623	38,557	7.6	6.1	1.9
Aphrodite	Rogers	Hybrid	5,748	37,437	8.0	6.8	1.7
WS-SP04	Wannamaker	Small specialty melon, 0.5-0.75 kg, 'Sprite-type', high sugar	7,442	27,491	6.0	5.8	1.8
PX 1461-1013	Seminis	Hybrid	6,050	79,207	7.5	6.3	2.3
Jaipur (BS 4309397)	Seminis	Hybrid	7,260	38,932	7.8	6.2	1.9
Moneyloupe (ACX 3908)	Abbott & Cobb	Hybrid	4,538	27,316	8.3	6.5	2.1
ACX 4757	Abbott & Cobb	Hybrid 72 maturity, fruit shape oval	6,050	37,577	8.5	6.4	2.0
CV			***22%***	***27%***			
LSD [1]			***NS***	***NS***			

[1] Fisher's Protected LSD ($p<0.05$)

New and Current Tomato Varieties Compete for Best Performers in Mississippi

David Ingram, Bill Evans, Blake Layton, Andy Milling, Charles Waldrup, Tommy Bishop, and Victor Lee

Tomatoes are one of the most popular crops grown by Mississippi's vegetable producers as well as one of the most profitable on a per acre basis. Most of Mississippi's tomato production occurs in the southern half of the state with the heaviest concentration in Smith, Jasper, Newton, and George Counties. In 2004, tomato cultivar trials were conducted at the Mississippi State University Truck Crops Branch Experiment Station in Crystal Springs (Copiah County) and at Myrick Farms (Smith County). Soil at the Smith County locations is a sandy loam, at Copiah a gravelly silt loam. The trials' objectives included evaluation of cultivar productivity as well as disease incidence, particularly spotted wilt virus (TSWV).

Four-week-old seedlings of nine commercially available and five experimental tomato varieties were planted as transplants on April 2, 2004 (Smith Co.) and April 3, 2004 (Copiah Co.) using typical plastic-mulch staked tomato culture with drip irrigation. Ten plants were planted per plot with in-row plant spacing of two feet and nine feet between rows. The experiment was set up as a randomized complete block with four replications. Fourteen entries were evaluated at Smith, nine at Copiah. Tomatoes were treated with standard tomato production practices for south Mississippi, including staking, tying, removal of suckers below the first fruit cluster, chemical and mechanical weed control, and integrated insect and disease management.

Harvest began on June 14, 2004 (Smith) or June 15 (Copiah) and continued until July 9 (Smith) or July 15 (Copiah) for a total of eleven (Smith) and nine (Copiah) harvest dates. At each harvest date, total yield, marketable yield, and number of marketable fruit were collected. Insects and diseases were treated on an as needed basis. TSWV was observed in relatively high incidence at both locations and infected plants were mapped as to location in the Smith test to correlate incidence with reported TSWV resistance in some varieties being evaluated. From the data collected, mean marketable fruit weight was calculated as the marketable yield/number of marketable fruit. Cull yield was calculated as total yield-marketable yield.

Table 1. Ratings of 2004 Tomato Variety Trial[1]

Location	Smith Co.	Copiah Co.
Weather	3	2
Fertility	5	5
Irrigation	5	5
Pests	2	3
Overall	3	3

[1]See introduction for a description of rating scales.

Some oozing culls at Smith were not taken to the grading area and thus were not counted or weighed. It was thought that these averaged less than one fruit per plant and less than two or three per plot, and had little influence on conclusions to be drawn from the study.

All data were subjected to analysis of variance at a probability level of P=0.05 using SAS for PC version 9.1. When significant variety effects were detected for the measured variables, means were separated using Fisher's protected least significant difference test at P=0.05.

An additional observational trial, without replication, was planted at Copiah Co. This trial was planted, managed, and harvested identically to the replicated trials. Data from this trial is presented without statistics.

Trial conditions for both locations are presented in Table 1.

Total yield at Copiah averaged a bit below that at Smith while marketable yields at Copiah were consistently lower than those at Smith (Table 2). At both locations, Amelia and Mountain Spring were among the top yielding entries. At Smith, the top entries also included 'EX1408383', 'BHN 543', and 'XP140537R'. At Copiah, 'Florida 47 R', 'Biltmore', 'Mountain Fresh', and 'BHN 543' also produced high marketable yields. Average fruit size was in the range of 10 to 13 ounces per fruit, which is typical for the large fruited tomato varieties desired by growers and consumers. Average fruit size was slightly larger at Smith than Copiah for all cultivars. 'Biltmore' produced the largest average marketable fruit at both lo-

cations. 'Florida 47R', 'Bush Celebrity' and 'Mountain Fresh' (all recently grown commercially in Smith County) were among the poorest yielding varieties at Smith.

Tables 3 and 4 present yield data by harvest date. This data can be useful to select cultivars by relative maturity date and concentration of harvest. In general, all varieties produced their maximum total yield around the first week or so of July (Tables 3 and 4). Heavy rainfall during June and July is thought to have resulted in poor pollination and fruit set early in the season at both locations. 'Amelia', 'Mountain Spring', 'Tygress' and 'Bush Celebrity' appeared to produce significant quantities of marketable fruit earlier in the season as compared to other varieties in the trial. 'Bush Celebrity' however, began to produce lower quality fruit as the season progressed.

Table 2. Total Tomato Yield and Fruit Size, 2004[1]

Variety	Total yield *lbs/plot*	Marketable yield *lbs/plot*	Marketable fruit *no/plot*	Mean fruit wt. *oz/fruit*	Cull yield *lbs/plot*
Smith County					
Amelia	196	143	189	12.1	**53**
EX 01408383	**193**	**133**	**173**	12.4	**60**
Mountain Spring	**183**	**122**	**160**	12.1	**62**
BHN 543	**187**	118	**164**	11.6	**69**
XP1405037R	**171**	118	**162**	11.7	**53**
Tygress	**173**	108	146	119	**65**
SVR01409432	164	107	**156**	10.9	**57**
Biltmore	164	106	127	**13.4**	**58**
Sebring	157	95	130	11.8	**62**
SVR01409513	151	91	109	**13.3**	**60**
Florida 47R	138	86	116	12.0	**52**
Bush Celebrity	**170**	85	122	11.1	85
XP1417977	142	80	97	**13.2**	**61**
Mountain Fresh	120	68	94	11.6	**52**
LSD[2]	***30***	***27***	***37***	***0.7***	***19***
Copiah County					
Amelia	143	87	121	10.7	**56**
Mountain Spring	125	**78**	**123**	10.2	**47**
Florida 47	**142**	**76**	**118**	10.6	66
Biltmore	**132**	**75**	96	**12.5**	**57**
Mountain Fresh	**137**	**73**	**120**	9.8	**64**
BHN 543	**148**	**71**	**109**	10.6	77
Sebring	113	61	87	11.2	**52**
Tygress	113	61	92	10.7	**51**
Bush Celebrity	**136**	56	85	10.7	80
LSD[2]	***20.4***	***16.3***	***26.6***	***1.00***	***14.3***

[1] Plots: 10 plants, 2 ft. in-row, 9 ft. between rows.

[2] Within columns, values different by more than the LSD value are statistically different. Best performing group of entries within each column is presented in **bold.**

Several entries showed fewer spotted wilt symptoms than others at Smith (Table 5). 'Amelia', 'EX0108383', and 'XP1405037R' had the fewest symptomatic plants. About 30 to 40 percent of plants in plots of 'Biltmore', 'Mountain Fresh', 'Florida 47R', and 'BHN 543' showed symptoms of virus infection. 'Amelia', 'Sebring', 'Tygress', and 'Bush Celebrity' had 15 percent infection or less. Tomato spotted wilt virus did not affect one variety, 'EX01408383'. Incidence of TSWV was not formally rated at Copiah.

In the observational trial at Copiah, 'BHN 591' had a higher marketable yield than any replicated entry at that location (Table 6). Several other entries in the observational trial at Copiah performed as well as the best group in the replicated trials. Three experimental lines grown in replicate at Smith performed in the top half of entries in the Copiah observational trial. The other two experimental lines tested at Smith, 'XP1417977' and 'XP1405037R', were not grown at Copiah.

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Table 3. Yield (Pounds per Plot) by Harvest Date, Smith Co., 2004[1]

Variety	6/14	6/16	6/18	6/21	6/23	6/25	6/28	6/30	7/2	7/5	7/9
Total Yield											
Amelia	14.1	17.3	6.0	8.6	6.2	**15.9**	**26.9**	**34.1**	24.6	31.6	11.4
EX 010408383	5.7	8.7	3.4	9.1	5.3	5.5	5.8	20.2	25.7	**77.3**	26.5
Mountain Spring	**15.4**	**16.1**	6.0	9.1	6.7	10.0	11.2	16.4	26.1	46.8	19.7
BHN 543	5.8	**11.6**	8.2	11.0	**11.2**	13.2	14.1	23.9	22.1	36.0	30.5
XP1405037R	2.4	4.7	7.7	10.9	**10.6**	6.5	4.9	6.4	16.6	60.7	**39.6**
Tygress	**16.9**	**14.0**	5.5	6.9	**11.4**	14.1	17.8	24.4	20.6	29.8	11.9
SVR01409432	5.7	**11.0**	7.3	9.7	8.9	13.2	13.5	21.3	21.5	33.9	17.6
Biltmore	7.6	9.1	5.1	7.7	5.8	4.4	7.8	17.8	25.9	50.3	22.4
Sebring	4.9	8.1	6.3	8.9	**8.8**	6.3	6.8	5.3	17.2	41.5	**43.0**
SVR01409513	1.3	9.4	6.9	10.8	7.1	8.9	3.0	9.7	13.9	47.5	32.2
Florida 47R	3.5	8.5	6.0	7.8	5.6	7.9	7.4	14.7	21.7	36.6	18.5
Bush Celebrity	**16.5**	**12.9**	10.4	13.8	**12.9**	**20.8**	12.9	17.6	16.7	25.5	9.4
XP1417977	7.2	**12.9**	3.4	6.3	4.0	4.9	7.4	18.0	17.3	43.7	16.5
Mountain Fresh	7.7	9.7	4.4	5.7	4.5	6.4	7.8	15.5	20.2	27.6	11.0
LSD[2]	***4.4***	***6.6***	***NS***	***NS***	***4.2***	***6.4***	***6.5***	***9.1***	***NS***	***12.2***	***10.2***
Marketable Yield											
Amelia	13.5	13.2	4.6	7.3	**6.0**	**13.6**	**24.0**	**27.8**	14.7	15.0	3.3
EX 010408383	4.1	5.8	2.5	5.1	3.4	3.6	5.2	16.8	21.0	**47.9**	**17.8**
Mountain Spring	**11.3**	**12.5**	4.6	4.9	4.2	8.1	9.3	13.1	16.4	27.8	9.4
BHN 543	4.3	**8.9**	4.8	6.8	**6.9**	**10.7**	11.4	19.1	14.8	16.0	14.7
XP1405037R	1.5	3.8	6.1	8.3	**8.7**	4.1	4.4	5.5	12.0	**40.7**	**22.6**
Tygress	**15.2**	**11.5**	3.9	5.6	**8.9**	**10.9**	11.8	13.4	10.9	11.6	4.7
SVR01409432	4.8	8.0	3.1	6.4	**6.8**	**10.6**	9.9	15.5	12.9	18.9	9.6
Biltmore	6.3	4.4	1.8	4.1	3.4	2.0	5.0	14.5	17.9	32.2	14.5
Sebring	3.8	6.0	4.9	4.3	4.9	2.9	4.7	3.9	13.5	24.1	**22.3**
SVR01409513	1.3	6.2	3.2	5.3	3.7	7.0	2.6	7.6	8.1	28.4	17.5
Florida 47R	2.4	5.8	2.2	3.4	3.7	4.1	6.3	10.3	15.8	21.9	10.5
Bush Celebrity	11.0	5.6	5.4	5.4	**6.8**	**12.9**	9.0	9.6	8.4	9.1	1.5
XP1417977	5.6	6.6	2.1	3.7	2.4	1.5	4.9	13.8	9.7	23.2	6.7
Mountain Fresh	5.7	6.2	2.7	3.2	1.6	2.7	6.1	10.9	13.1	11.8	4.2
LSD[2]	***4.0***	***4.9***	***NS***	***NS***	***3.4***	***4.7***	***4.7***	***7.0***	***NS***	***10.6***	***7.5***

[1] Plots: 10 plants, 2 ft. in-row, 9 ft. between rows.

[2] Within columns, values different by more than the LSD value are statistically different. Best performing group of entries within each column is presented in **bold.** NS = no significant difference within column.

Table 4. Yield (Pounds per Plot) by Harvest Date, Copiah Co., 2004[1]

Variety	6/15	6/21	6/24	6/28	7/01	7/06	7/09	7/12	7/15
Total Yield									
Amelia	3.1	7.7	**14.8**	**28.7**	18.8	27.6	**16.1**	**14.7**	**11.7**
Mountain Spring	**10.1**	**11.7**	**11.3**	18.3	20.6	32.1	**9.3**	**7.7**	4.2
Florida 47	3.1	6.5	8.0	15.6	**26.7**	**46.2**	**17.6**	**12.9**	5.8
Biltmore	1.7	5.4	3.9	12.1	**28.5**	**37.7**	**19.8**	**14.2**	8.7
Mountain Fresh	1.1	7.3	**10.7**	13.6	21.8	30.0	**23.2**	**16.6**	**13.1**
BHN 543	3.5	**11.3**	**15.8**	**22.6**	18.5	25.3	**21.5**	**18.6**	**11.1**
Sebring	1.9	7.3	6.6	10.7	15.6	22.1	**19.4**	**16.0**	**13.4**
Tygress	4.9	8.3	**15.5**	11.7	14.0	19.7	**12.2**	**17.6**	8.6
Bush Celebrity	6.0	**15.0**	**17.6**	16.9	14.7	28.7	**13.6**	**13.2**	**10.7**
LSD[2]	***2.9***	***3.9***	***7.0***	***8.3***	***6.1***	***12.2***	***NS***	***NS***	***4.3***

continued

Table 4, continued. Yield (Pounds per Plot) by Harvest Date, Copiah Co., 2004[1]

Variety	6/15	6/21	6/24	6/28	7/01	7/06	7/09	7/12	7/15
					Marketable Yield				
Amelia	2.1	**4.5**	**12.3**	**22.8**	**14.2**	**15.3**	5.9	**5.9**	**3.7**
Mountain Spring	**5.8**	**6.5**	**8.1**	13.8	13.5	**18.1**	5.0	**4.2**	**3.0**
Florida 47	2.1	3.8	4.5	10.1	**17.2**	**22.8**	6.5	**5.9**	**3.8**
Biltmore	0.4	2.3	1.8	6.1	**20.0**	**22.8**	**11.6**	**6.0**	**4.3**
Mountain Fresh	0.7	3.5	**7.4**	10.0	13.6	**14.9**	**13.7**	**6.0**	**3.4**
BHN 543	1.4	**4.3**	**7.4**	14.9	11.8	10.5	**9.7**	**7.3**	**4.2**
Sebring	1.2	**5.4**	3.8	6.2	10.9	13.9	**8.5**	**7.7**	**3.6**
Tygress	3.0	**5.4**	**12.0**	9.3	7.3	8.7	6.2	**6.3**	**3.4**
Bush Celebrity	3.0	**6.8**	**11.0**	8.2	7.9	7.6	6.3	**4.0**	**1.7**
LSD[2]	***2.0***	***2.8***	***5.5***	***6.7***	***6.2***	***8.0***	***5.4***	***NS***	***NS***

[1] Plots: 10 plants, 2 ft. in-row, 9 ft. between rows.

[2] Within columns, values different by more than the LSD value are statistically different. Best performing group of entries within each column is presented **in bold.** NS = no significant difference within column.

Table 5. Incidence of Tomato Spotted Wilt Virus, Smith Co., 2004.[1]

Variety	Incidence TSVW *(%)*
Amelia	**7.5**
EX 0108383	**0.0**
Mountain Spring	17.5
BHN 543	27.5
XP1405037R	**2.5**
Tygress	17.5
SVR01409432	17.5
Biltmore	40.0
Sebring	**12.5**
SVR01409513	20.0
Florida 47R	35.0
Bush Celebrity	**15.0**
XP1417977	27.5
Mountain Fresh	40.0
LSD[2]	***16.5***

[1] Plots: 10 plants, 2 ft. in-row, 9 ft. between rows.

[2] Within columns, values different by more than the LSD value are statistically different. The statistically least symptomatic group of entries within each column is presented **in bold.**

Table 6. Total Tomato Yield and Fruit Size from Observational Trial, Copiah Co., 2004[1]

Variety	Total yield *lbs/plot*	Marketable yield *lbs/plot*	Marketable fruit *no/plot*	Mean fruit wt. *oz/fruit*	Cull yield *lbs/plot*
BHN 591	155	88	138	10.1	67
Sun Leaper	132	81	138	9.4	52
Daybreak	163	81	131	9.9	81
BHN 640	127	76	116	10.4	52
Floralina	133	76	112	11.0	57
SVR 0140932	127	75	126	9.4	52
Spitfire	128	73	112	10.6	54
Pik-Red	130	73	136	8.6	57
Sun Gem	114	71	113	10.1	43
Palisade	102	69	127	8.8	32
SVR 01408426	112	68	100	10.9	45
BHN 586	115	65	11	9.3	51
EX 0148383 (Quincy)	165	65	93	11.0	101
Florida 91	88	58	90	10.2	30
JTO 99203	125	58	95	9.8	68
Mountain Pride	127	58	100	9.3	70
Bingo	107	57	111	8.2	50
BHN 444	141	56	87	10.2	86
Sunchief	113	50	78	10.2	63
Sun Master	102	49	72	10.9	53
Red Sun	122	48	59	13.1	74
Carnival	160	40	58	11.0	120
Big Beef	109	34	56	9.8	75
Empire	135	30	46	10.6	106

[1] Plots: 10 plants, 2 ft. in-row, 9 ft. between rows. Single replication.

Seed Sources for Alabama Trials

Seeds donated by the following:

Sunseeds
Richard Wojciak
12214 Lacewood Lane
Wellington, Florida 33414-4983
Phone: (561) 791-9061
Fax: (561) 798-4915
Mobile: (561) 371-2023
E-mail: richard.wojciak@sunseeds.com

Other seed sources:

Abbott and Cobb, Inc.
To order: (800)-345-SEED
In TX: (800) 227-8177
Tech Rep: Russ Becham
4517 Tilman Bluff Road
Valdosta, GA 31602
Fax: (912) 249-8135

BHN
1310 McGee Avenue
Berkeley, CA 94703
Phone: (510) 526-4704
Email: mail@berkeleyhort.com

Harris Moran
P.O. Box 4938
Modesto, CA 95352
(209) 579-7333
(209) 527-8684

Harris Seeds
To order: (800) 544-7938
P.O. Box 22960
60 Saginow Dr.
Rochester, NY 14692-2960

Hollar
To order: (719) 254-7411
P.O. Box 106
Rocky Ford, CO 81067-0106
Ph: (719) 254-7411
Fax: (719) 254-3539
Website: www.hollarseeds.com

Johnny's Select Seeds
To order: (207) 437-4395
Tech. Rep: Steve Woodward
955 Benton Ave
Winslow, ME 04901
Ph: (207) 861-3900
Email: info@johnnyseeds.com

Rupp Seeds
To order: (800) 700-1199
17919 County Road B
Waseon, OH 43567

Sandoz Rogers/Novartis
To order: (912) 560-1863

Seedway
To order: (800) 952-7333
Tech. Rep: James J. Pullins
1225 Zeager Rd.
Elizabethtown, PA 17022
Ph: (717) 367-1075
Fax: (717) 367-0387
E-mail: info@seedway.com

Seminis Vegetable Seeds, Inc
Tech Rep: Rusty Autry
2221 North Park Ave.
Tifton GA 31796
Ph: (229) 386-0750

Siegers Seed Company
13031 Reflections Drive
Holland, MI 49424
Fax: (616) 994-0333

Tifton Seed Distribution Center
Tech. Rep: Van Lindsey
Ph: (912) 382-1815

Willhite
To order: (800) 828-1840
Tech Rep: Don Dobbs
P.O. Box 23
Poolville, TX 76487
Fax: (817) 599-5843

Guidelines for Contributions to the Vegetable Variety Regional Bulletin

Vegetable variety evaluation and selection is an essential part of production horticulture. The vegetable variety regional bulletin is intended to report results of variety trials conducted by research institutions in the Southeast in a timely manner. Its intended audience includes growers, research/extension personnel, and members of the seed industry.

Timeliness and rapid turnaround are essential to better serve our audience. Hence, two bulletins are printed each year: one in November with results from spring crops, and another one in April with results from summer and fall crops. It is essential that trial results are available before variety decisions for the next growing season are made.

Here are a few useful guidelines to speed up the publication process for the next regional bulletin (fall 2004).

When: March 25, 2005
Deadline for fall 2004 variety trial report submissions.

What: Results pertaining to variety evaluation in a broad sense. This includes field performance, quality evaluation, and disease resistance. Here are a few tips:

- Follow the format used in the previous 13 regional bulletins.
- Include author's complete mailing address, e-mail address, and phone number.
- Express yields on a per acre basis or in typical measures used for the crop (i.e., number of 40 pound bushels per acre).
- Follow your own unit's internal review process. Contributions will be edited, but not formally reviewed.

How: Send a disk and hard copy to:

Edgar Vinson or Joe Kemble
Department of Horticulture
101 Funchess Hall
Auburn University, AL 36849-5408

Or send e-mail to:
vinsoed@auburn.edu, or
kembljm@auburn.edu

UNIVERSITY OF GEORGIA
1. Vidalia Onion and Vegetable Research Center, Lyons, GA

AUBURN UNIVERSITY
2. E.V. Smith Research Center, Shorter, AL
3. Brewton Agricultural Research Unit, Brewton, AL
4. Chilton Research and Extension Center, Clanton, AL
5. Sand Mountain Research and Extension Center, Crossville, AL
6. North Alabama Horticulture Research Center, Cullman, AL

MISSISSIPPI STATE UNIVERSITY
7. Myrick Farms, Smith County, MS
8. Truck Crops Experiment Station, Crystal Springs, MS